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United States Patent [19][11] **Patent Number:** **6,047,196****Mäkelä et al.**[45] **Date of Patent:** ***Apr. 4, 2000**[54] **COMMUNICATION DEVICE WITH TWO MODES OF OPERATION**[75] Inventors: **Jarmo Mäkelä ; Arto Lehtonen**, both of Tampere; **Veli-Matti Soini**, Tarttila; **Lasse Siitonen; Risto Rönkkä**, both of Tampere, all of Finland[73] Assignee: **Nokia Mobile Phones, Ltd.**, Salo, Finland

[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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[51] **Int. Cl.**⁷ **H04M 1/00**[52] **U.S. Cl.** **455/556; 455/90; 455/566; 455/575**[58] **Field of Search** 455/90, 128, 556, 455/566, 552, 575, 557; 379/433, 434, 438, 447, 428, 440[56] **References Cited****U.S. PATENT DOCUMENTS**

5,257,397 10/1993 Barzegar et al. 455/557

5,335,276	8/1994	Thompson et al.	380/21
5,422,656	6/1995	Allard et al.	455/556
5,491,507	2/1996	Umezawa et al.	455/566
5,526,411	6/1996	Krieter	379/433
5,646,649	7/1997	Iwata et al.	455/575
5,692,046	11/1997	Jambhekar	379/433
5,715,524	2/1998	Jambhekar et al.	455/90
5,742,912	4/1998	Nishiyama et al.	455/566
5,797,089	8/1998	Nguyen	455/556

FOREIGN PATENT DOCUMENTS

0 472 361 A2	2/1992	European Pat. Off. .
0 678 987 A1	10/1995	European Pat. Off. .
4108169 A1	9/1991	Germany .
2 291 560	1/1996	United Kingdom .

Primary Examiner—Daniel S. Hunter*Assistant Examiner*—Thuan T. Nguyen*Attorney, Agent, or Firm*—Perman & Green, LLP[57] **ABSTRACT**

The invention relates to a mobile station which comprises two separate user interfaces and an outer covering (10, 11) which can be unfolded. The device has the appearance and the size of a common mobile phone when the outer covering (10, 11) is closed, whereby available is a first user interface being substantially a telephone user interface. When the outer covering (10, 11) of the device is unfolded it exposes a second user interface having a relatively large-sized display (12) and an alphanumeric keypad (15). Alphanumeric messages and graphical information can be transmitted and received using the second user interface.

17 Claims, 5 Drawing Sheets